Sharon Steel Farrell Works Site
Priority Panel Presentation
Spring 2012

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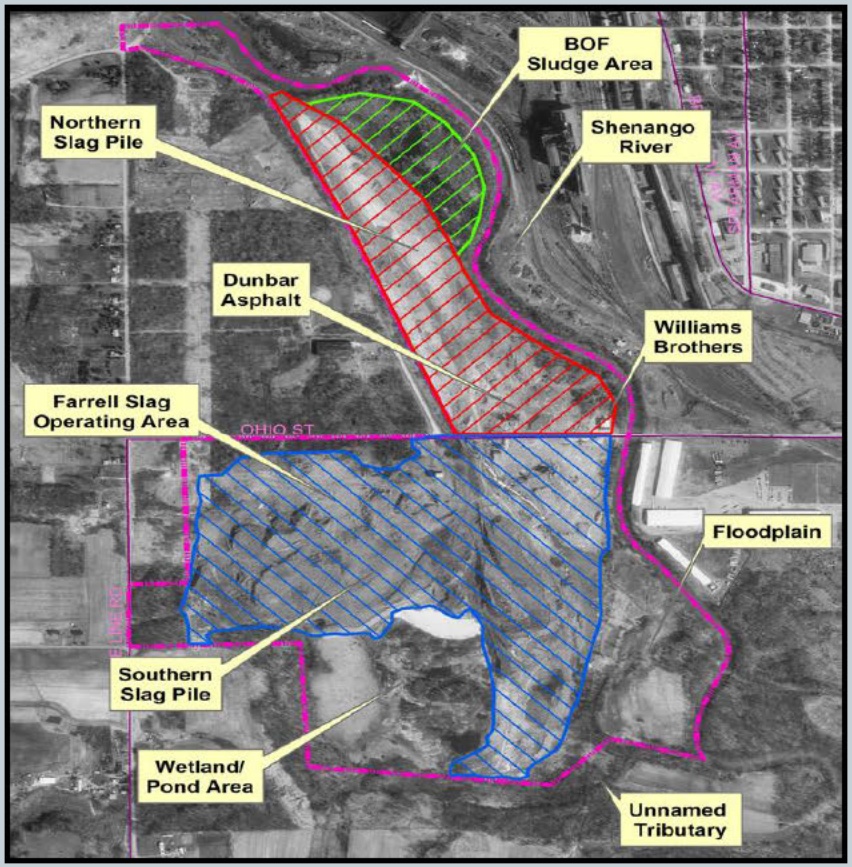
Sharon Steel Farrell Works
Superfund Site

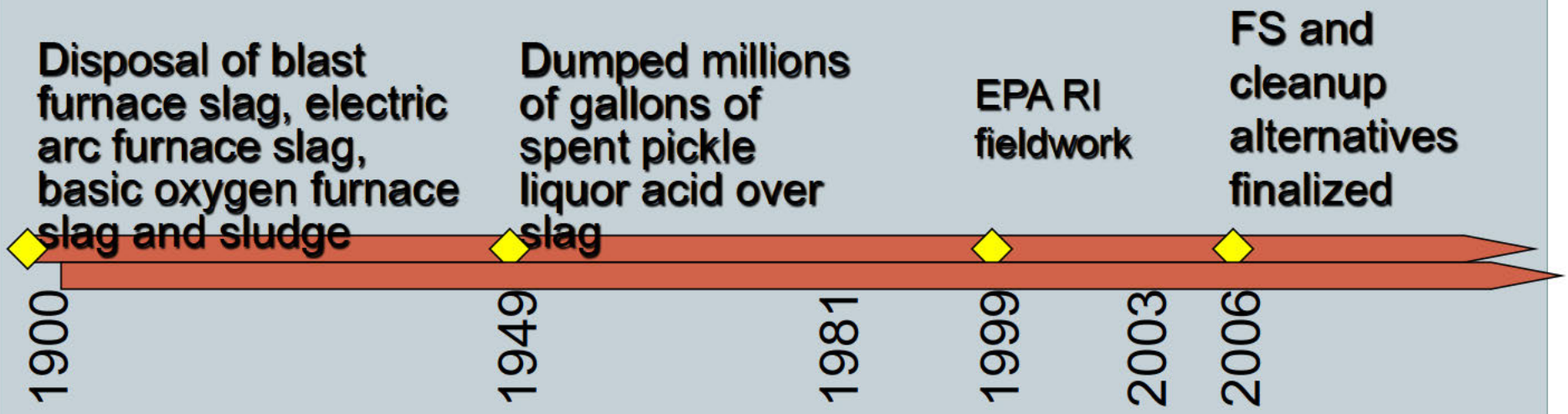
Sharon Steel Farrell Works Site Features




Operable Unit Two:
Asphalt Plant and Trucking
Company

History and Background

- 3 waste areas on 400 acres in Farrell, Wheatland, and Hermitage near PA/OH border.
- Southwest of the Former Sharon Steel Plant on the Shenango River



Remedial Investigation

- Residential well sampling
- Sampling of shallow and deep aquifers from new and existing monitoring wells
- Waste slag/sludge, soil, surface water and sediment sampling
- Animal tissue sampling
- Risk assessment to determine the levels of cleanup to ensure human health and the environment is protected
- Air modeling of dust dispersion

Current
Unacceptable Cancer Risk/Hazard Index

- Industrial workers at the asphalt plant and trucking company
- Visitors and trespassers (motorcycles, ATVs) due to high levels of heavy metals.
- Child and Adult Fish Consumers
- Air dispersion modeling conducted during the RI predicted that airborne dust from slag/soil could impact residential areas off the Site.

Future
Unacceptable Cancer Risk/Hazard Index

- Adult/Child Resident to soil/slag onsite
- Child Exposure to Floodplain soils
- Adult/Child Exposure to shallow groundwater
- Adult/Child Exposure to Fish

Ecological Risk on Site

- Floodplain and wetland soils:
  - Risks driven by high levels of heavy metals

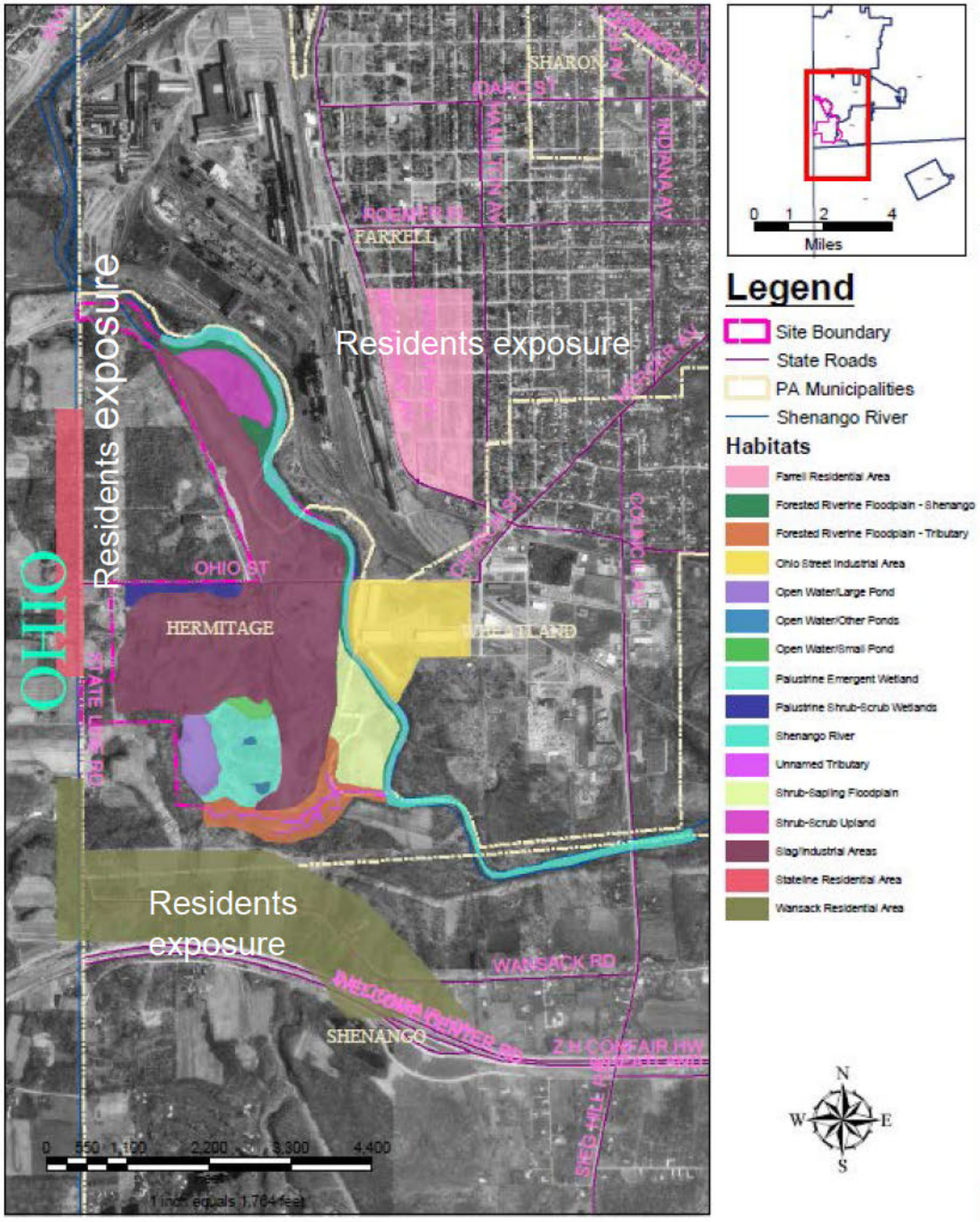
- Site-related contamination found in Shenango River, floodplain, and wetlands which is negatively impacting the vegetation and soil invertebrates and food chain risk to vermivore communities.

Floodplains on Site along side the Shenango River


BOF Sludge Area on Site


Trespassers

Potential Exposure Areas at Sharon Steel Farrell Works Site



Remedial Action Objectives

- Minimize human health exposure to dust from the site
- Minimize human and wildlife exposure to contaminated slag/sludge areas
- Eliminate runoff of contaminated material into the Shenango River and the wetlands
- Reduce infiltration and transport of contamination into shallow groundwater
- Use of groundwater onsite should be restricted for only non-potable or production purposes
- Restore habitat value of barren areas

Key Remedial Alternatives

- No Action - $0
- Regrading/RCRA-Modified Cap - $97 Million

- Excavation/Treatment/Disposal - $266 Million
- Regrading/Clay/Topsoil Cap - $55 Million

- Regrading & Cement Cap - $58 Million
- Regrading & Biosolid Cap- Phase 1 $10.13 Million*

*Cost for Phase 1 Biosolid Cap came from the 90 % Design and all other costs from OU-1 ROD

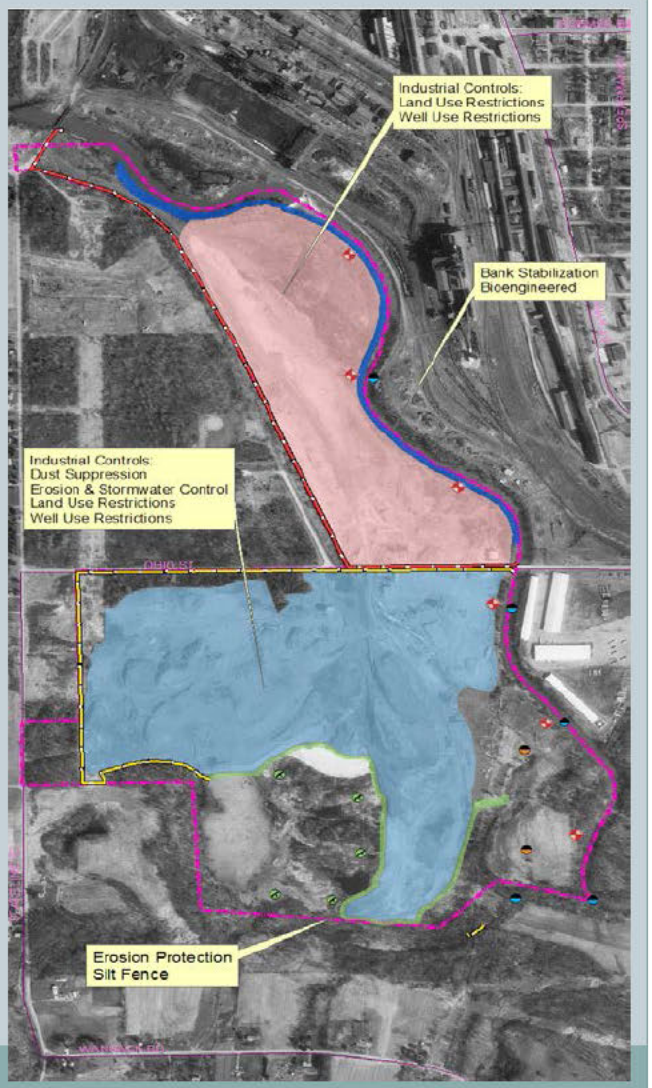
EPA's Selected Remedy for OU-1

Phase 1 Northern Area

- Stabilize eroded Shenango River banks
- Regrade and contour waste piles
- Construction of a Biosolid cap
- Create wetlands for storm water control
- Institutional controls
- Long-term groundwater monitoring

Phase 2 Southern Area

- Farrell Slag Operating-2020
- Mining slag for road base with asphalt
- Biosolid Cap will be constructed



Pilot Study Conducted

- Benchscale Tests to determine Big Picture Questions on Site:

1. Do biosolids provide enough organic matter to facilitate plant growth?

2. Can biosolids amendments result in sustainable revegetation for the Sharon Steel Site?

Pilot Study Results

- Biosolids:

1. Improved plant nutrition & growth of plants

2. Increased weight of plants by 4 fold

3. Best application rate of biosolids that resulted in reduced bioavailability and acceptable plant growth was the combination of 20% biosolids with compost


Setup Test Plot for Slag Area


Native Grasses Emerging after Application of Biosolids

Carbon Sequestration Study

- EPA Headquarters Office of Solid Waste and Emergency Response and Ohio State
- Purpose was to develop a protocol for carbon accounting at the Sharon Steel Site after application of carbon-rich soil amendments for Remediation
- Carbon Sequestration is one of the most promising ways for reducing the buildup of greenhouse gases in the atmosphere. Terrestrial carbon sequestration refers to storage of carbon in plants and soils.

Results from Carbon Sequestration Study

- Analyses conducted immediately after application of the soil amendments already demonstrated the efficacy of the remedy at sequestering carbon.

- Initial results indicate that this cleanup approach may be applicable to large mining and smelting sites. In the future carbon sequestration at large Sites could create tradable carbon credits, a great incentive for cleaning large barren Sites.

Future Site Schedule

- March 2012 : Completion of the Phase 1 RD
- June 2012: SSC Expected to be Signed
- July 2012: RA Funding Received
- July 2012: Obligate RA Funding to RACs
- August 2012 – January 2012 – RA Work planning
- Spring 2013 – RA Onsite Construction begins